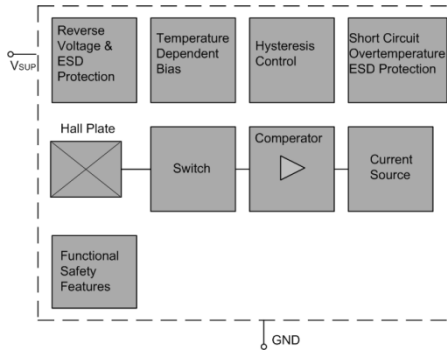


HS-3511-05-0300



Product image serves as example only.

Block Diagram



HS-3511-05-0300

Unipolar 2 - Wire
Flatpack Hall Effect Sensor

Features

- › Compact size
- › Various switching sensitivities
- › Customized types available

Approvals



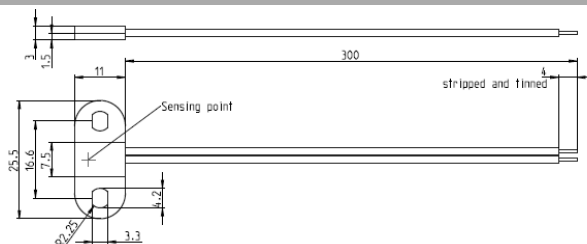
Absolute Maximum Ratings

Stresses beyond those listed in the "Absolute Maximum Ratings" may cause permanent damage to the device
Functional operation of the device at these conditions is not implied. Exposure to the absolute rating conditions for extended periods will affect device reliability

| Symbol | Parameter | wire colour | Min. | Max. | Unit | Conditions |
|------------------|------------------------|-------------|-------|------|------|---|
| V _{SUP} | Supply voltage | red | - 18 | | V | t < 1000 h ¹⁾ |
| | | | - | 28 | V | t < 96 h ¹⁾ |
| | | | - | 32 | V | t < 5 min ¹⁾ |
| | | | - | 40 | V | t < 5 x 400 ms ¹⁾ with series resistor R _v > 100 Ohm |
| V _{OUT} | Output voltage | red | - 0.5 | | V | t < 1000 h ¹⁾ |
| | | | - | 28 | V | t < 96 h ¹⁾ |
| | | | - | 32 | V | t < 5 min ¹⁾ |
| | | | - | 40 | V | t < 5 x 400 ms ¹⁾ with series resistor R _v > 100 Ohm |
| I _O | Output current | red | - | 65 | mA | |
| I _{OR} | Reverse output current | red | - 50 | | mA | |

¹⁾ No cumulative stress All voltages listed are referenced to ground (GND)

Dimensions



Wire Assignment

| Name | Function | Cable colour |
|------------------|---------------------------|--------------|
| V _{SUP} | Supply voltage and output | red |
| GND | Ground | black |

HS-3511-05-0300
 wire length [mm]

Material Information

| | Material | Colour |
|------------------|---------------------|------------|
| Housing | PA6 | black |
| Cable | UL1007/1569, AWG 24 | red, black |
| Potting compound | Epoxy | black |

Environmental Characteristics

| | | |
|-----------------------|----|--------------|
| Operating temperature | °C | - 20 to + 85 |
|-----------------------|----|--------------|

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Unipolar 2 - Wire
Flatpack Hall Effect Sensor

Characteristics

At recommended operation conditions if not otherwise specified in the column "Conditions".

Typical characteristics for $T_J = 25\text{ }^\circ\text{C}$ and $V_{SUP} = 12\text{ V}$

| Symbol | Parameter | wire colour | Min. | Typ. | Max. | Unit | Conditions |
|---------------|---|-------------|------|------|------|---------------|--|
| Supply | | | | | | | |
| I_{SUPlo} | Low supply current | red | 2 | | 5 | mA | |
| I_{SUPlo} | High supply current | red | 12 | | 17 | mA | |
| I_{SUPhi} | Reverse current | red | | | 1 | mA | for $V_{SUP} = -18\text{ V}$ |
| Output | | | | | | | |
| t_f | Output fall time ¹⁾ | | | | 1 | μs | ¹⁾ $V_{SUP} = 12\text{ V}$; |
| t_r | Output rise time | | | | 1 | μs | |
| t_d | Delay time ¹⁾ | | | 16 | | μs | |
| t_{samp} | Output refresh period | | 1.6 | 2 | 2.66 | μs | |
| t_{en} | Enable time of output after settling of V_{SUP} | | | 50 | | μs | $V_{SUP} = 12\text{ V}$ $B > B_{on} + 2\text{ mT}$ or $B < B_{off} - 2\text{ mT}$ |

Power-on-self-test

Self test can be triggered externally; details on request

¹⁾ Guaranteed by design

Recommended Operating Conditions

| Symbol | Parameter | wire colour | Min. | Max. | Unit | Conditions |
|-----------|----------------|-------------|------|------|------|------------|
| V_{SUP} | Supply voltage | red | 3.0 | 24 | V | |

Magnetic Characteristics Overview

| Symbol | Parameter | wire colour | Min. | Typ. | Max. | Unit | Conditions |
|------------|--|-------------|------|------|-------|-------|------------|
| B_{ONth} | ON threshold range ¹⁾ | - | -30 | | 30 | mT | |
| B_{OOth} | OFF threshold range ¹⁾ | - | -30 | | 30 | mT | |
| B_{th} | Adjustable step size ²⁾ | - | | 0.5 | | mT | |
| T_C | Temperatur compensation of magnetic thresholds ³⁾ | - | 0 | | -3000 | ppm/K | |

¹⁾ Available range

²⁾ Small steps at small values, bigger steps at higher values. May not be undercut

³⁾ Different temperature compensation available on request

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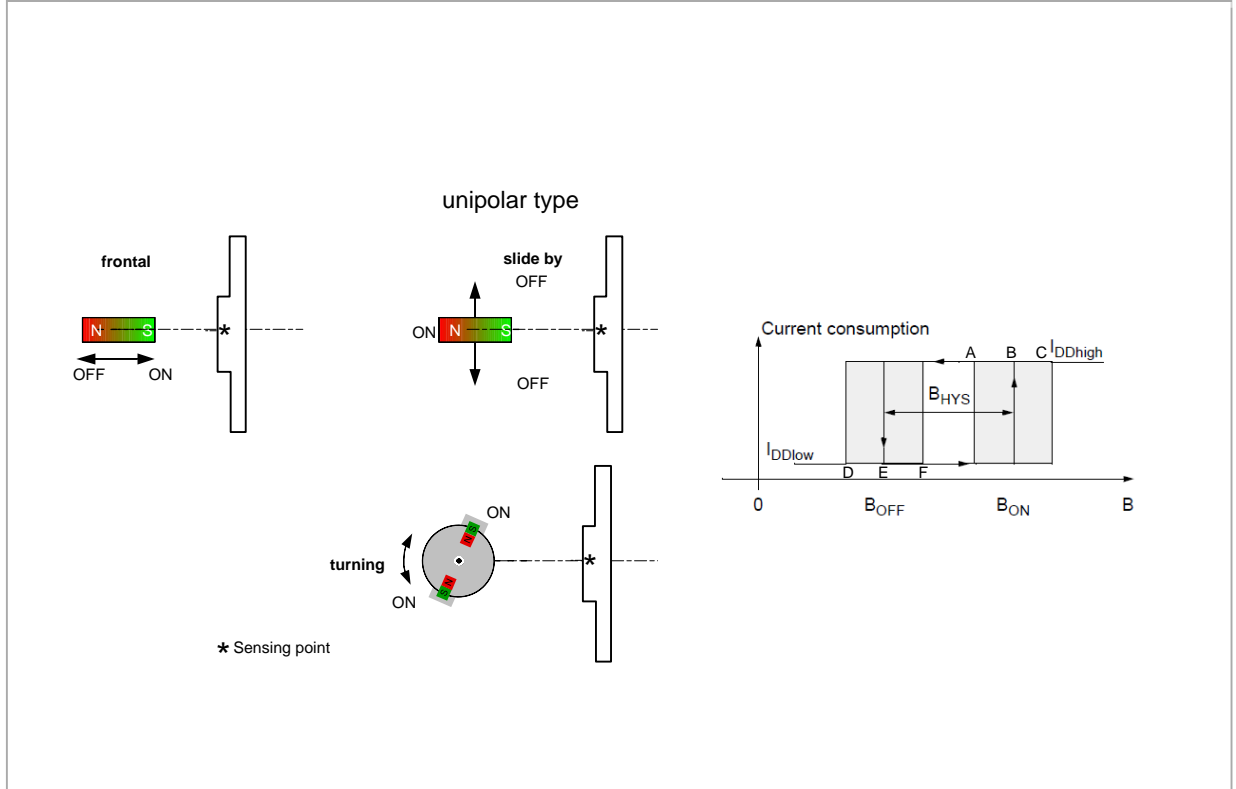
Unipolar 2 - Wire
Flatpack Hall Effect Sensor

Magnetic Characteristics

| Switching Type | Temp. koef. of magnetic thresh. TC [ppm/K] | On point B_{ON} | | | Off point B_{OFF} | | | Hysteresis B_{HYS} ¹⁾ | | |
|----------------|---|-------------------|------|------|---------------------|------|------|------------------------------------|------|------|
| | | Min. | [mT] | | Min. | [mT] | | Min. | [mT] | |
| | | | Typ. | Max. | | Typ. | Max. | | Typ. | Max. |
| latching | 0 | tbd. | 6.0 | tbd. | tbd. | 4.0 | tbd. | - | 2.0 | - |
| | | A | B | C | D | E | F | | | |

¹⁾ The hysteresis is the difference between the switching points $B_{HYS} = B_{ON} - B_{OFF}$

Magnetic Approach (for example)



Off-center position of sensing point

